

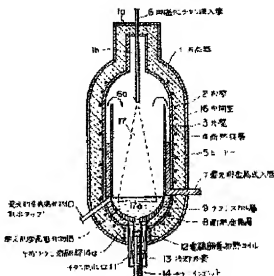
# PRODUCTION OF METALLIC TITANIUM

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## Abstract of JP1042533

**PURPOSE:** To continuously produce metallic Ti having high purity at good yield by injecting  $TiCl_4$  vapor and reducing metal vapor from upper part of a reaction vessel and making gas phase reaction of both vapor at the range, which is not brought into contact with inner wall of the vessel. **CONSTITUTION:** An opening hole for a Ti discharging hole 11 in the reaction vessel 1 is plugged with Ti ingot 14 and  $MgCl_2$  15 is packed on this as metallic chloride for reducing agent. The  $MgCl_2$  is melted with a heater 5 and the Ti ingot 14 is heated with electromagnetic induction heating coil 12. Molten Mg as reducing metal is supplied from a pipe 7 and stayed at the intermediate chamber 16 to vaporize with heat in the reaction vessel 1. The  $TiCl_4$  vapor is injected as conical shape from the pipe 6 and by forming the injected gas 17 having the conical shape without any contact with the inner wall 2, the Mg vapor is enclosed to generate the Ti and  $MgCl_2$  by gas phase reducing reaction. The generated Ti and  $MgCl_2$  are descended together with injecting gas 17 and caught in the molten  $MgCl_2$  layer 15 at bottom part of the vessel 1. The molten Ti is precipitated as it is to deposit on the Ti ingot melting part 14a. The generated Ti is continuously discharged by adjustment of heating and cooling with the coil 12 and a cooling jacket 13.



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